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› Thermalright Assassin X120 Refined SE CPU Air Cooler User Manual

## Thermalright AX120 Refined SE

# Thermalright Assassin X120 Refined SE CPU Air Cooler User Manual

Model: AX120 Refined SE | Brand: Thermalright

## 1. INTRODUCTION

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This manual provides comprehensive instructions for the installation, operation, and maintenance of your Thermalright Assassin X120 Refined SE CPU Air Cooler. Designed for efficient heat dissipation, this cooler features 4 heat pipes, a TL-C12C PWM fan, and AGHP technology, ensuring optimal performance for a wide range of Intel and AMD processors.



Figure 1.1: Thermalright Assassin X120 Refined SE CPU Air Cooler, showcasing its compact design and fan.

## 2. SAFETY INFORMATION

Please read and understand all safety instructions before installing or operating the CPU cooler. Failure to do so may result in personal injury or damage to the product or other components.

- **Electrical Safety:** Ensure your computer system is powered off and unplugged from the wall outlet before beginning installation.
- **Static Electricity:** Discharge any static electricity from your body by touching a grounded metal object (e.g., the computer case) before handling components. Consider using an anti-static wrist strap.
- **Handling:** Handle the cooler and other components with care. The heatsink fins can be sharp.
- **Ventilation:** Ensure adequate airflow within your computer case for optimal cooling performance and system stability.
- **Children and Pets:** Keep packaging materials and small components out of reach of children and pets.

### 3. PACKAGE CONTENTS

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Verify that all items listed below are present in your package:

- Thermalright Assassin X120 Refined SE CPU Cooler (Heatsink with pre-attached fan)
- Mounting hardware for Intel LGA 1150/1151/1155/1156/1200/1700/17XX/1851 sockets
- Mounting hardware for AMD AM4/AM5 sockets
- Thermal paste
- User Manual (this document)



Figure 3.1: Overview of the cooler and its components, including the fan, heatsink, and mounting accessories.

### 4. SETUP AND INSTALLATION

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Follow these steps carefully to install your Thermalright Assassin X120 Refined SE CPU Air Cooler. The installation process may vary slightly depending on your CPU socket type (Intel or AMD).

#### 4.1. Preparation

1. Power off your computer and unplug it from the power outlet.
2. Open your computer case to access the motherboard and CPU socket.
3. If an old cooler is present, carefully remove it and clean any residual thermal paste from the CPU's integrated heat spreader (IHS) using isopropyl alcohol and a lint-free cloth.

#### 4.2. Installing the Mounting Bracket

Identify the correct mounting hardware for your CPU socket (Intel or AMD). The cooler is equipped with metal fasteners for both platforms.

# DETAIL DETERMINES QUALITY

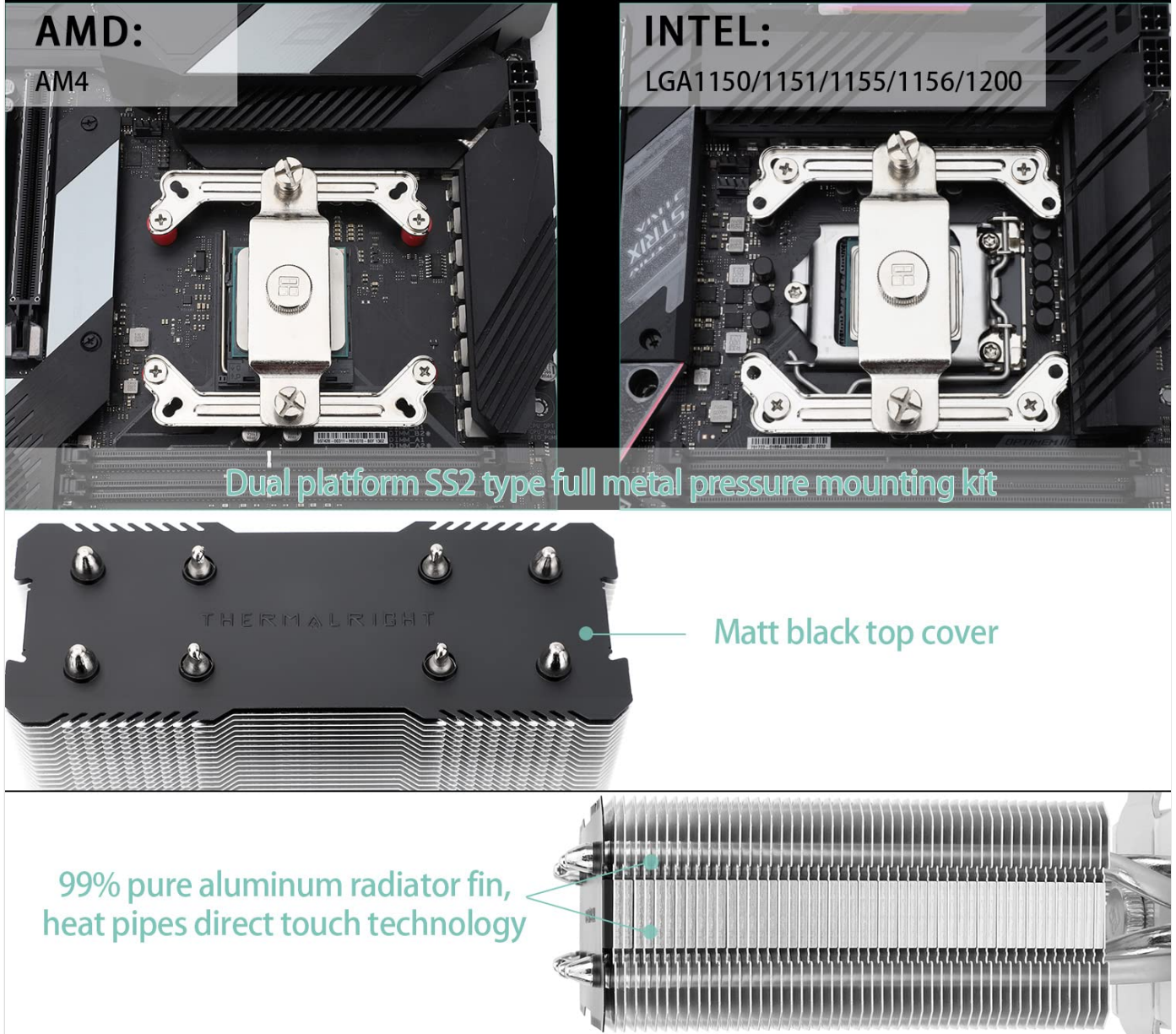


Figure 4.1: Dual platform SS2 type full metal pressure mounting kit for AMD AM4 and Intel LGA 1150/1151/1155/1156/1200 sockets.

- **For Intel Sockets (LGA 1150/1151/1155/1156/1200/1700/17XX/1851):**
  - a. Attach the Intel backplate to the rear of your motherboard, aligning the holes with the CPU socket.
  - b. Secure the standoffs through the motherboard from the front side.
  - c. Place the Intel mounting brackets onto the standoffs and secure them with the provided screws. Note: The screws for LGA 1151 and LGA 1700 sockets may be similar; ensure you use the correct ones as per the instructions provided with the hardware.
- **For AMD Sockets (AM4/AM5):**
  - a. Remove the stock plastic retention clips from the motherboard, but retain the stock backplate.
  - b. Attach the AMD standoffs to the stock backplate's screw holes.
  - c. Place the AMD mounting brackets onto the standoffs and secure them with the provided screws.

## 4.3. Applying Thermal Paste

Apply a small amount of the included thermal paste to the center of your CPU's IHS. A pea-sized dot is generally sufficient. The cooler's AGHP technique and direct touch heat pipes ensure efficient thermal transfer.

#### 4.4. Mounting the Heatsink

1. Carefully align the heatsink with the mounting brackets, ensuring the base of the cooler makes full contact with the thermal paste on the CPU.
2. Place the cooler onto the CPU, aligning the spring-loaded screws on the cooler's retention plate with the holes on the mounting brackets.
3. Tighten the screws in an alternating X-pattern (e.g., top-left, bottom-right, top-right, bottom-left) until they are finger-tight, then use a screwdriver to tighten them evenly until secure. Do not overtighten.



Figure 4.2: The Thermalright Assassin X120 Refined SE installed on a motherboard, showing RAM compatibility and the TL-C12C fan.

#### 4.5. Connecting the Fan

Connect the 4-pin PWM fan cable from the TL-C12C fan to the CPU\_FAN header on your motherboard. Ensure the connection is secure.

## 5. OPERATING INSTRUCTIONS

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Once installed, the Thermalright Assassin X120 Refined SE CPU Air Cooler operates automatically, controlled by your motherboard's fan speed settings (PWM). The TL-C12C fan is designed for efficient cooling with a low noise level.

- **Automatic Fan Control:** The PWM (Pulse Width Modulation) function allows your motherboard to dynamically adjust the fan speed based on CPU temperature, optimizing for both cooling performance and noise levels.
- **Monitoring Temperatures:** You can monitor your CPU temperatures using software provided by your motherboard manufacturer or third-party utilities. Ensure temperatures remain within safe operating limits for your CPU model.
- **AGHP Technology:** The cooler's AGHP (Anti-Gravity Heat Pipe) technology ensures consistent cooling performance regardless of the cooler's orientation (vertical or horizontal), effectively solving the inverse gravity effect.

## 6. MAINTENANCE

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Regular maintenance helps ensure optimal performance and longevity of your CPU cooler.

- **Dust Removal:** Periodically (e.g., every 3-6 months), power off your computer and use compressed air to remove dust buildup from the heatsink fins and fan blades. Hold the fan blades gently to prevent them from spinning rapidly during cleaning, which can damage the bearings.
- **Thermal Paste:** Thermal paste typically lasts for several years. If you notice a significant increase in CPU temperatures over time, consider reapplying fresh thermal paste.
- **Fan Inspection:** Check the fan for any signs of damage or excessive noise. If the fan becomes noisy or stops spinning, it may need replacement.

## 7. TROUBLESHOOTING

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This section addresses common issues you might encounter with your CPU cooler.

Problem	Possible Cause	Solution
High CPU Temperatures	<ul style="list-style-type: none"><li>◦ Improper thermal paste application</li><li>◦ Heatsink not seated correctly</li><li>◦ Insufficient airflow in case</li><li>◦ Fan not spinning or spinning too slowly</li></ul>	<ul style="list-style-type: none"><li>◦ Reapply thermal paste</li><li>◦ Reseat the cooler, ensuring even pressure</li><li>◦ Improve case ventilation (add case fans)</li><li>◦ Check fan connection to CPU_FAN header; verify fan operation in BIOS/UEFI</li></ul>
Fan is Noisy	<ul style="list-style-type: none"><li>◦ Dust buildup on fan blades</li><li>◦ Fan bearings worn out</li><li>◦ Fan cable interfering with blades</li></ul>	<ul style="list-style-type: none"><li>◦ Clean fan blades with compressed air</li><li>◦ Consider replacing the fan</li><li>◦ Route fan cables away from blades</li></ul>

Problem	Possible Cause	Solution
Mounting Screws Don't Fit / Instructions Seem Off	<ul style="list-style-type: none"> <li>Incorrect screws used for socket type</li> <li>Misinterpretation of screw labeling (e.g., LGA 1151/1700)</li> </ul>	<ul style="list-style-type: none"> <li>Double-check the screw bags and instructions for your specific socket. Some screws may be compatible with multiple sockets despite specific labeling.</li> <li>Refer to online installation guides or videos if available.</li> </ul>

## 8. SPECIFICATIONS

Detailed technical specifications for the Thermalright Assassin X120 Refined SE CPU Air Cooler:

Feature	Specification
Model	AX120 Refined SE
CPU Cooler Dimensions (L x W x H)	125mm x 71mm x 148mm (4.92 x 2.8 x 5.83 inches)
Product Weight	0.645kg (1.42lb)
Heatsink Material	Aluminum fins, Pure copper heat pipes and base, Nickel plated
Heat Pipes	4 x 6mm heat pipes (AGHP technique)
Fan Model	TL-C12C
Fan Dimensions (L x W x H)	120mm x 120mm x 25mm (4.72 x 4.72 x 0.98 inches)
Fan Speed	1550 RPM $\pm$ 10%
Air Flow	66.17 CFM (MAX)
Noise Level	$\leq$ 25.6 dB(A)
Power Connector	4-pin PWM
Rated Voltage	12V DC
Bearing Type	S-FDB Bearing
Compatibility	Intel: LGA 1150/1151/1155/1156/1200/1700/17XX/1851; AMD: AM4/AM5

# ASSASSIN X 120R SE DIMENSION

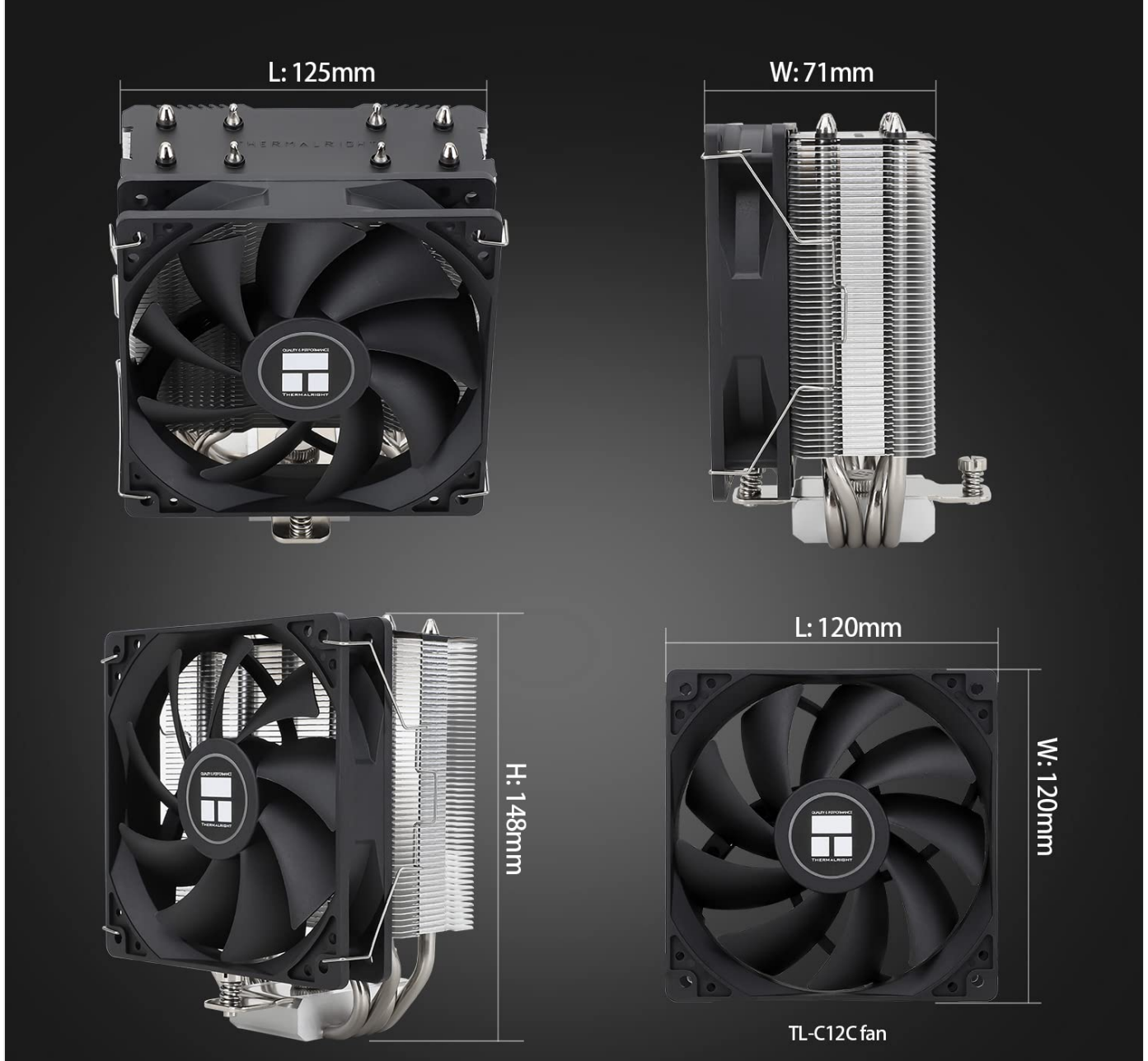


Figure 8.1: Dimensions of the Assassin X120 Refined SE cooler and its TL-C12C fan.

## 9. WARRANTY AND SUPPORT

Thermalright products are manufactured to high quality standards. For specific warranty terms and conditions, please refer to the warranty information provided with your product packaging or visit the official Thermalright website. Keep your proof of purchase for warranty claims.

For technical support or inquiries, please contact Thermalright customer service through their official channels. Up to 20,000 hours of industrial service life is expected for the S-FDB bearings.

*Note: This manual is for informational purposes only. Specifications are subject to change without notice. Always refer to the latest information from the manufacturer.*

